



Science • Conservancy • Cooperation

# Water Quality Task Force

Superior, WI

# Our Mission: To assist in the development of science-based water regulation in Wisconsin

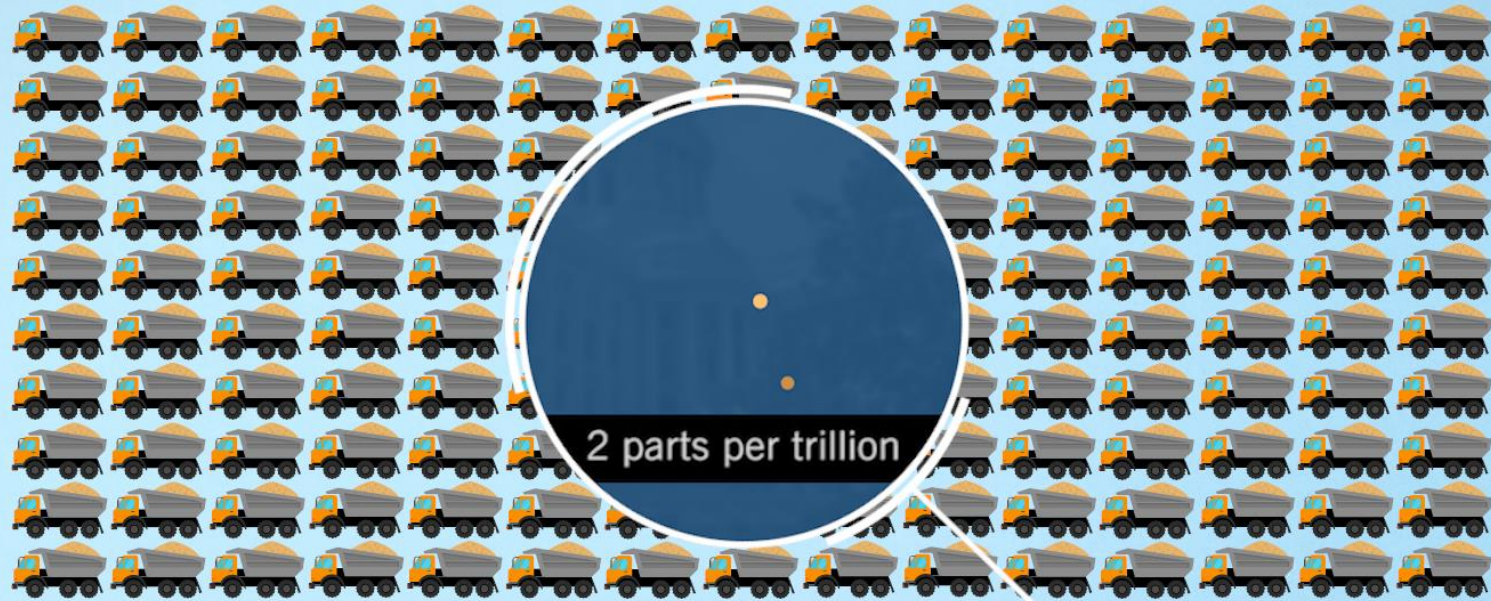


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# What we know so far about PFAS

- ▶ Wisconsin's process for setting groundwater standards lacks necessary transparency
- ▶ There are thousands of different compounds, each with different benefits and risks
- ▶ PFAS regulation will impact nearly every industry in the state, including agriculture, paper, and manufacturing. It will directly impact local government and taxpayers statewide



# The State of Technology

- ▶ What technology is available?
- ▶ Testing and Monitoring Limitations?
- ▶ How effective is the technology?
- ▶ What is the cost of the technology?
- ▶ How do you manage spent media?
- ▶ Can technology treat all compounds on WDNR's list?



# PFAS water treatment

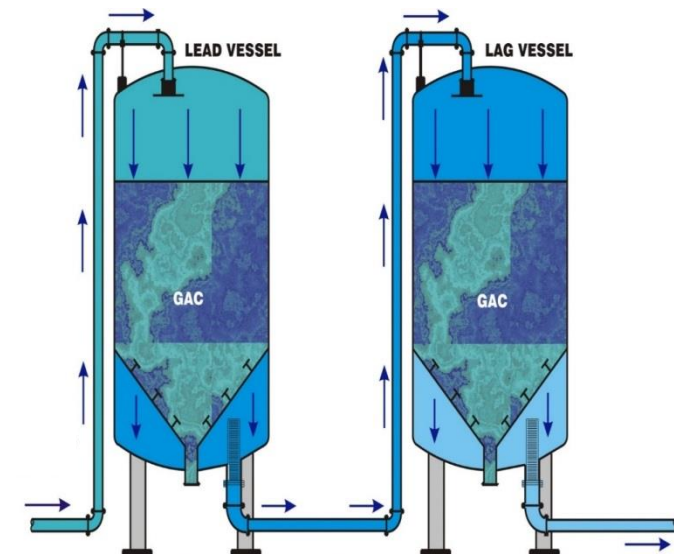


# Widely-demonstrated PFAS water treatment technologies

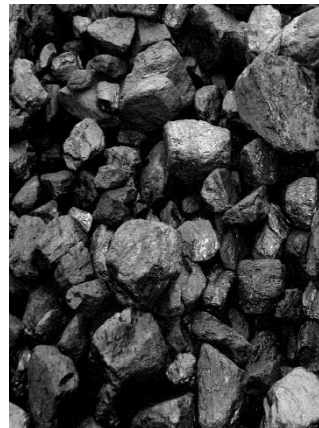
Absorption techniques  
are currently the most  
affective treatment

Pre-treatment is  
usually necessary

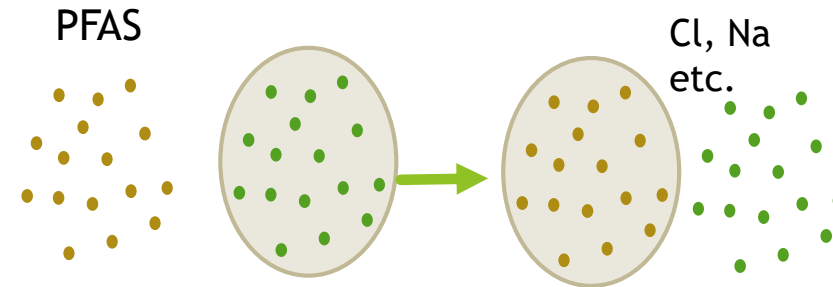
Some compound  
selectivity



granular  
activated carbon  
(GAC)



ion  
exchange  
resin (IX)

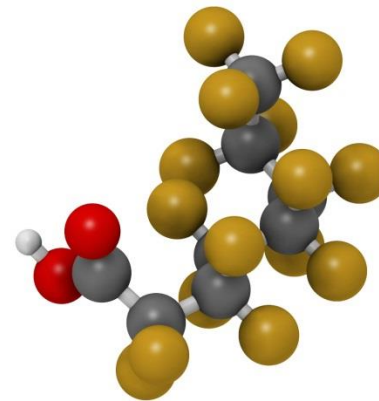


## Disposal options

Incineration at high temperatures 350C - 950C is the main technique used for media disposal.

Stabilization research is ongoing.

Other destructive techniques are being researched.





# The Economic Impact of a Conservative Standard

# Perspective on Drinking Water Standards

<u>Pollutant</u>	<u>Drinking Water Standard (ppt)</u>
▶ PCBs	500
▶ Arsenic	10,000
▶ Lead	15,000
▶ Cyanide	200,000
▶ <b>PFAS (U.S./WI)</b>	<b>70/20/2*</b>
▶ <b>PFOA/PFOS (Canada)</b>	<b>400/600</b>
▶ <b>PFOA/PFAS (W.H.O.)</b>	<b>4,000/400</b>

\*EPA Recommendation/WI DHS Enforcement Standard/WI DHS PAL

# Estimated Costs

## ▶ Paper Mill

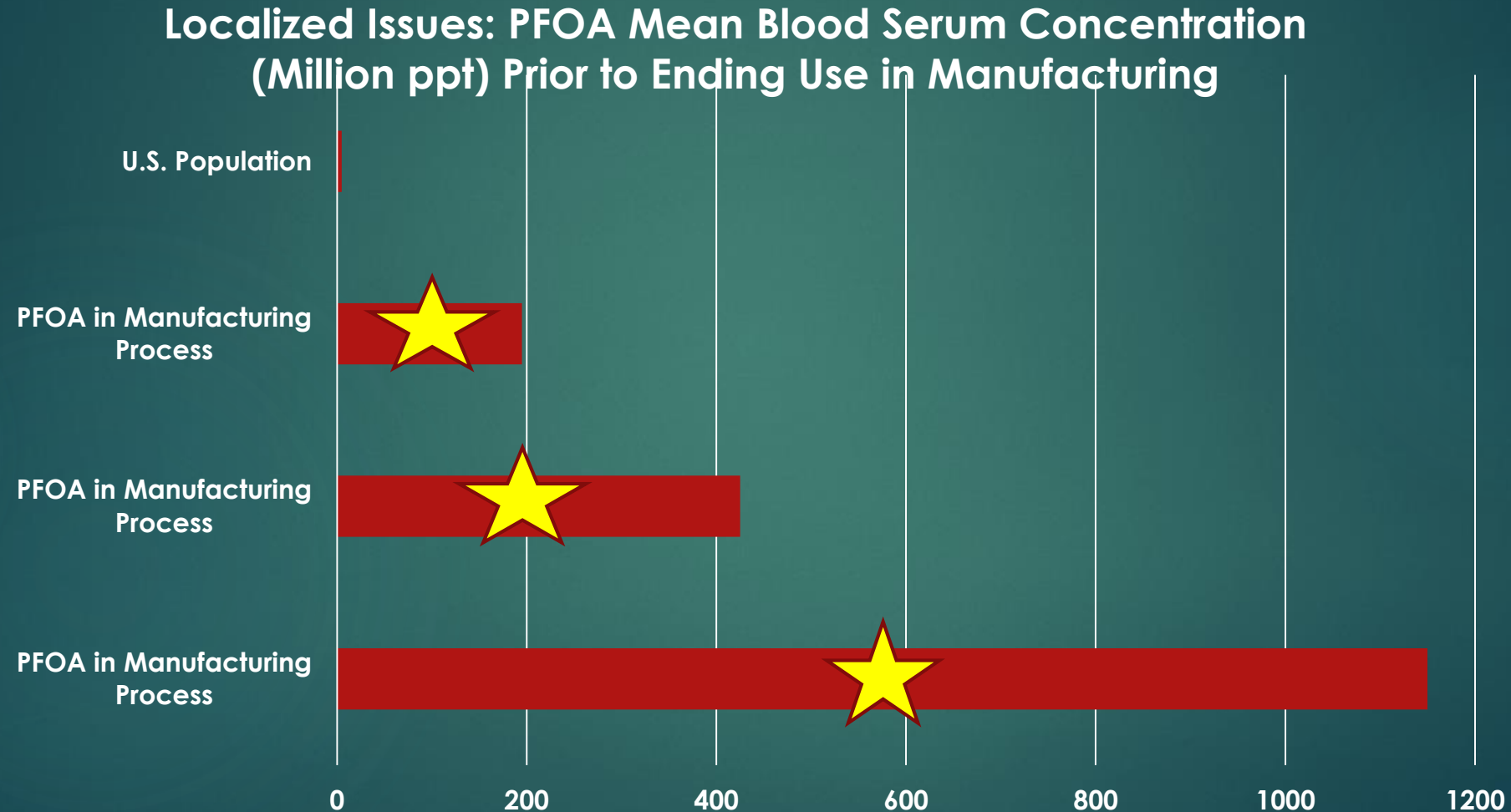
- “Add-on” control costs per facility = \$435 - \$933 million
- \$3.7 - \$25.5 million/lb PFAS removed

## ▶ Municipality (150,000 people & 37,500 households)

- “Add-on” control costs = \$11,600 - \$25,000/household
- \$3.7 - \$25.5 million/lb PFAS removed

## ▶ Technologically infeasible

# Center for Disease Control





# Policy Recommendations

- ▶ Develop science needed to understand actual PFAS health risk prior to setting standards
- ▶ Focus on 'hotspot' clean-up
- ▶ Avoid "One Size Fits All" standards that:
  - Create public alarm
  - Require cost-prohibitive expenditures
  - Result in widespread adverse economic/social impact

# Future Coalition Work

- ▶ Work with legislators to improve Wisconsin's groundwater standards process to provide:
  - ▶ Transparency
  - ▶ Accountability
  - ▶ Sound science
- ▶ Advocate that any regulation or legislation is:
  - ▶ Based on science
  - ▶ Feasible
  - ▶ Protective of human health
  - ▶ Not detrimental to Wisconsin's Economy

The Water Quality Taskforce is a  
resource for you

# Questions?

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- ▶ Ward Swanson, Vice President and Senior Environmental Scientist, Barr Engineering: [wswanson@barr.com](mailto:wswanson@barr.com)
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